

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED  
CENTRAL FAX CENTER  
MAR 06 2006

Applicant : Friedrich Bock  
Appln. No. : 10/775,956  
Filed : February 10, 2004  
Title : REAL-EAR ZOOM HEARING DEVICE

Conf. No. : 1611  
TC/A.U. : 2646  
Examiner : Dionne Pendleton

Customer No. : 000,116  
Docket No. : 36443

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

PETITION TO MAKE SPECIAL  
AND  
STATEMENT & DISCUSSION REGARDING PREEEXAMINATION SEARCH  
AND MOST RELEVANT UNCOVERED REFERENCES IN SUPPORT

Sir:

Applicant hereby resubmits, at the request of the Examiner, this Petition to Make Special to request an Acceleration of the Examination of this application, under 37 CFR § 1.102(d) according to MPEP §708.02(VIII). A check in the amount of \$130.00 for the petition fee under 37 CFR § 1.17(h) was enclosed with the petition filed on October 11, 2005, which was erroneously sent unsigned and Applicant provides the attached Statement and Discussion. The IDS is also being resubmitted, so that the Examiner can have a complete package. Note that copies of cited U.S. and foreign references are not included, as they have been submitted previously, but are listed on the enclosed IDS.

CERTIFICATION OF FACSIMILE TRANSMISSION	
I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office in the date shown below.	
Robert F. Bodi	
Signature	Date
3-6-06	

**STATEMENT & DISCUSSION REGARDING PREEXAMINATION SEARCH,  
AND MOST RELEVANT UNCOVERED REFERENCES IN SUPPORT**

**PREEXAMINATION SEARCH**

A pre-examination search was conducted in compliance with MPEP §708.02, VIII. Special Examining Procedure For Certain New Applications – Accelerated Examination.

An initial search by the European Patent Office of the co-pending application, EP 1443798 A3, is attached hereto. Attached hereto is European Publication No. EP 1443798 A2, which was also examined in the above search. Note that the independent claim of the EPO application is essentially identical to the claim of the subject U.S. application. The EPO search identified two A references, one of which was also a D reference. Accordingly, the European Search report did not identify any references relevant to the patentability of the claims of this application.

A second search of U.S. patents and patent applications, conducted by the undersigned attorney on June 16, 2005 and updated on September 13, 2005, covered the following USPTO Patent Classifications:

Class 381, Electrical audio signal processing systems and devices, was searched via the following subclasses:

The following subclasses of subclass 312: HEARING AIDS, ELECTRICAL, were searched in detail:

- Subclass 313: Directional (181 references reviewed); and
- Subclass 322: Specified casing or housing; subclass 330: Hook over ear (217 references reviewed);

Subclass 92: DIRECTIVE CIRCUITS FOR MICROPHONES was searched restricted to those references having the keywords "hearing aid" or the phrase "hearing device". (69 references reviewed)

The following subclasses of class 367: COMMUNICATIONS, ELECTRICAL: ACOUSTIC WAVE SYSTEMS AND DEVICES, subclass 118: DISTANCE OR DIRECTION FINDING, were searched with the search restricted to patents that were either also classified in class 381, or patents that contained either the phrase "hearing aid" or the phrase "hearing device" (35 references reviewed):

- Subclass 119: With beam forming, scanning, or focusing, subclass 121: By electrical means;
- Subclass 124: By combining or comparing signals; further, the following subclasses of subclass 124 were also searched:
  - Subclass 125: Phase comparison and/or correlation;
  - Subclass 126: Addition or subtraction;
- Subclass 129: With plurality of transducers

DISCUSSION OF MOST RELEVANT REFERENCE(S)

Each of the enclosed references is cited in the IDS. However, the party reviewing the search has determined that none of the uncovered references are relevant to the subject invention, for the reasons set out below.

The present invention, as set forth in claim 1, the only independent claim, is directed to a behind the ear hearing device having at least two microphones for detecting acoustical signals and a beam former unit having transfer characteristics of amplification that are dependent on both "the direction with which said acoustical signals impinge on said microphones" (lines 18–20) and on the "frequency of said acoustic signals" (lines 20–21) with the beam former having the following features:

a substantially constant amplification independent of said direction of impinging at said frequency of 1 kHz,

and

For said direction being 45° [with 0° being the direction faced by an individual wearing the device and 90° outwards from the ear of the user], a larger amplification than for said direction being 135° at said frequency of 5 kHz.

None of the references listed above teach or suggest any beam former unit having the cited characteristics.

It is noted that a number of references cited in the IDS teach the use of multiple microphones to form directional characteristics that are of the cardioid, hyper-cardioid, or some similar pattern. See, for example, U.S. Pat. Nos. 5,473,701 (Fig. 2), and U.S. Pat. App. No. 2003/0142836 (Figs. 4–9). However, no reference suggested directivity where amplification at 45° would differ from amplification at 135° at one frequency, but not at another.

Furthermore, at least one reference taught that microphone sensitivity may vary as a function of frequency. See, for example, U.S. Pat. App. No. 2003/0142836 (Fig. 11). Another reference taught that signal processing can also result in frequency sensitivity. See U.S. Pat. App. No. 2005/0058312 (where it is discussed that filtering and/or pre-processing might be used to compensate for frequency differences, see paragraph [0030]).

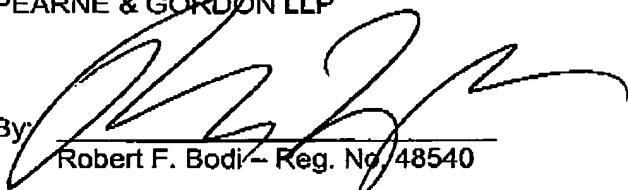
However, no reference was found that taught anything similar to the characteristics cited above, namely that at 1kHz, there would be no directivity impact on amplification, whereas at 5kHz, there would be a larger amplification for signals impinging at 45° than at 135°. This teaching is not found in any of the cited references. Thus, claim 1 is patentable over the prior art searched.

The remaining claims are dependent, directly or indirectly, on one of the independent claims discussed above, and are thus patentable over the references based on that dependency.

Accordingly, because all of the relevant classes have been searched without finding any relevant references, and because a search in the European Patent Office has similarly found no relevant references, the claims are patentable over the prior art.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. 34835.

Respectfully submitted,  
PEARNE & GORDON LLP

By:   
Robert F. Bodi - Reg. No. 48540

1801 East 9th Street  
Suite 1200  
Cleveland, Ohio 44114-3108  
(216) 579-1700

Date: March 6, 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED  
CENTRAL FAX CENTER  
MAR 06 2006

Applicant : Friedrich Bock  
 Appln. No. : 10/775,956  
 Filed : February 10, 2004  
 Title : REAL-EAR ZOOM HEARING DEVICE

Conf. No. : 1611  
 TC/A.U. : 3736  
 Examiner : TBD

Customer No. : 000,116  
 Docket No. : 36443

Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

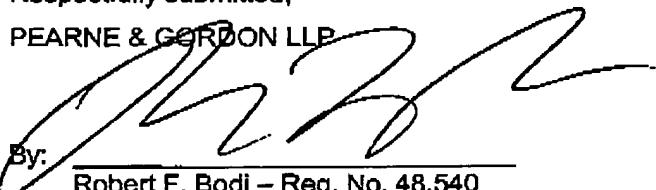
In accordance with Rule 56, Applicant is aware of the publications listed on the enclosed Form PTO/SB/08A. A copy of each listed U.S. patent or patent publication is not being submitted herewith. Copies of all other cited publications are enclosed herewith.

If any further fees are required by this communication, please charge such fees to our Deposit Account No. 16-0820, Order No. 36443.

Respectfully submitted,

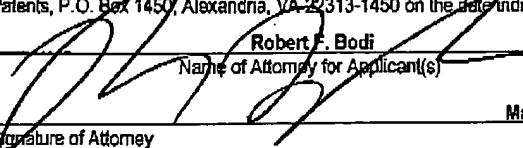
PEARNE & GORDON LLP

By:

  
Robert F. Bodi – Reg. No. 48,540

1801 East 9th Street  
 Suite 1200  
 Cleveland, Ohio 44114-3108  
 (216) 579-1700

Date: March 6, 2006

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.	
	
Signature of Attorney	March 6, 2006 Date
Name of Attorney for Applicant(s)	

PTO/SB/08A (07-05)

Approved for use through 07/31/2008. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**Substitute for form 1448/PTQ**

## **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

*(Use as many sheets as necessary.)*

Sheep

1

1000

**Complete if Known**

Application Number	10/775,956
Filing Date	February 10, 2004
First Named Inventor	Friedrich Bock
Art Unit	3736
Examiner Name	TBD
Attorney Docket Number	36443

**U. S. PATENT DOCUMENTS**

## FOREIGN PATENT DOCUMENTS

**EXAMINER:** initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kinds of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language

Translation is attached.  
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.